CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN WILDLIFE ENTERPRISE AND MANAGEMENT

WIEM 312: COMPARATIVE VERTEBRATE PHYSIOLOGY

STREAMS: WIEM Y3S1 **TIME: 2 HOURS**

DAY/DATE: MONDAY 16/12/2019 **2.30 P.M. – 4.30 P.M.**

INSTRUCTIONS:

- **Answer all questions in section A (30 marks) and any two in section B (40 marks).**
- **Do not write on the question paper.**

SECTION A: (30 MARKS)

Q1. Briefly discuss medical disorders relating to fluid and electrolyte balance in vertebrates. (6 marks)

Q2. (a) Enumerate the functions of the endocrine system. (2 marks)

(b) List six types of hormones in vertebrates. (3 marks)

Q3. Elaborate on the significance of a four-chambered heart in mammals. (4 marks)

Q4. Distinguish between

(a) Hibernation and brumation. (2 marks)

(b) Atrioventricular valves and semilunar valves. (2 marks)

(c) Isotonic and isometric contraction. (2 marks)

Q5. Briefly explain the first and second law of thermodynamics. (5 marks)

Q6. Briefly elaborate on ventilation and ventilation types in animals. (4 marks)

SECTION B: (40 MARKS)

Q7. Discuss various locomotion systems utilized by vertebrate species. (20 marks)

Q8. (a) Discuss causes of protein denaturation and its effects in vertebrates. (10 marks)

(b) Describe the application of Gibbs free energy in vertebrate bioenergetics. (10 marks)

Q9. Compare and contrast the respiratory systems in birds and mammals. (20 marks)
